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The Political Economy of Financial Repression in Transition Economies

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Why are governments drawn to regulate financial markets to the point of financial repression? It appears that post-Communist governments may have inhibited the development of financial institutions to ensure adequate flows of external capital to favored enterprises rather than to finance deficits.

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Summary findings

Financial systems in developing countries tend to be "restricted" or "repressed" through burdensome reserve requirements, interest-rate ceilings, foreign-exchange regulations, rules about the composition of bank balance sheets, or heavy taxation of the financial sector.

Why are governments drawn to regulate financial markets to the *point of financial repression*?

To address this question, Denizer, Desai, and Gueorguiev explore preliminary evidence from the post-Communist economies of Eastern Europe and the former Soviet Union, where financial regulations have rarely been examined systematically.

They find that the public-finance framework has limited ability to explain financial repression in the transition economies, given the peculiar financial lineage of the socialist state. The weak distinction between "public" and "private" spheres of finance in transition economies means that the deficit often conveys little information about the governments' real fiscal activities.

It is more fruitful to examine how political institutions, by shaping the incentives politicians face, affect financial policy.

Their findings suggest that post-Communist governments may adopt repressive financial controls — not to finance deficits more cheaply than would be the case under financial liberalization, but to maintain the authority and ensure the survival of those in power. In countries where pre-reform elites are plentiful in legislative bodies, where interparty competition is low, and where governing parties are well-represented in parliaments, elites have been able to perpetuate a system of implicit subsidies by "softening up" the financial sector — especially commercial banks — to ensure the continued flow of cheap credit to specific borrowers.

The main beneficiaries of these policies — large formerly state-owned industries with tight financial links to the largest commercial banks — are thus able to convert their well-established claims on public resources into preferential access to credit lines.

In other words, financial repression in transition economies may simply serve to solidify main-bank, main-firm relations. These results would lend support to the claim of smaller, cash-starved Eastern European entrepreneurs that the commercial banks have "taken over the role of the old planning ministries."

This paper — a joint product of the International Finance Corporation's Central Asia, Middle East, North Africa Department, and the Private Sector Development Department — is part of a larger effort to understand the workings of financial markets in transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Tseday Hailu, room F3P-198, telephone 202-974-4396, fax 202-473-8446, Internet address thailu@worldbank.org. Cevdet Denizer may be contacted at cdenizer@ifc.org. December 1998. (33 pages)

The Political Economy of Financial Repression in Transition Economies

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THE POLITICAL ECONOMY OF FINANCIAL REPRESSION IN TRANSITION ECONOMIES

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I. INTRODUCTION

Why do governments distort financial markets and impose impediments to capital mobility despite the inefficiencies that accompany such policies? It is well known that financial systems in developing countries tend to be "restricted" or "repressed" through burdensome reserve requirements, through interest-rate ceilings, through foreign-exchange regulations, through rules governing the composition of bank balance sheets, or through forms of heavy taxation of the financial sector. Less understood is why governments are drawn to regulate financial markets *to the point of financial repression.*

Before the 1970's, financial restrictions were often favored in capital-scarce countries on the grounds that usury could be better prevented, money supply better controlled, and higher investment-savings targets met than if financial markets were liberalized. In later years this claim was frequently supported with evidence from high-growth economies in East Asia, where governments supposedly manipulated financial systems in order to promote targeted industrial expansion. In most of the settings where repressive financial controls have been applied, however, the typical outcome has been economic contraction, not sustained growth. This realization has led to the emergence of something of a consensus in development macroeconomics: that financial repression is adopted in developing countries in order for governments to obtain resources to finance their deficits.

In this paper we explore some preliminary evidence from a region of the world where financial regulations have rarely been examined in any systematic manner, namely, the post-Communist economies of Eastern Europe and the former Soviet Union. We show that the public-finance framework has limited cache in explaining financial repression in the transition economies, given the peculiar financial lineages of the socialist state. Specifically, the weak distinction between the "public" and "private" spheres of finance in transition economies means that the deficit often conveys little information about the real fiscal activities of governments. We find that a more fruitful approach lies in examining how political

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institutions, by shaping the incentives politicians face, can determine the choice of financial policy. Our findings suggest that post-Communist governments inhibit the development of financial institutions to ensure adequate flows of external capital to the enterprise sectors, rather than to finance deficits.

The discussion is organized as follows. Section II defines financial repression, its historical debates and rationales. Section III examines the role of financial repression in the unique case of transition economies. The fourth section presents the empirical results of our estimations of financial repression in transition economies. The final section summarizes and offers some concluding remarks.

II. FINANCIAL REPRESSION AND FINANCIAL DEVELOPMENT

Financial Policies and Some Key Issues

For the past 25 years, the main analytical basis for studies of the role of the financial sector in development has been the McKinnon-Shaw framework of the "repressed" economy. In this view financial repression refers to a set of policies, laws, formal regulations, and informal controls, imposed by governments on the financial sector, that distort financial prices—interest rates and foreign exchange rates—and inhibit the operation of financial intermediaries at their full potential. The main instruments of financial repression are high reserve requirements and interest-rate ceilings, that is, a combination of (forced) low rates of return on assets and (forced) high portions of "set-aside" or reserve money. Successful financial repression increases the demand for credit, and at the same time, creates disincentives to save.

These conditions permit governments to intervene in financial markets in three ways. First, the imposition of large reserve or liquidity requirements on commercial banks creates an artificial demand for a government's own securities (Agénor and Montiel, 1996: 152). Second, because of the excess demand for credit, the government invariably begins to ration credit among competing users. Third, because of the disincentive to save, savers begin to switch from holding claims on the banking sector to holding claims in foreign markets. Thus selective and sectoral credit schemes, as well as capital controls on foreign exchange, are typical components of financial repression.

In the neo-classical perspective, the main justification for financial repression derives from an assumption of perfect substitutability of money and "productive" capital. In Tobin's monetary-growth model, if the return on capital rises relative to the return on money, it encourages a shift from money to capital in household portfolios, higher capital-to-labor ratios, and increased labor productivity (Tobin, 1965). The central implication of this reasoning is that reducing the rate of return on money—through interest-rate ceilings, but also

through an optimal level of inflation, both of which serve as a tax on real money balances—can increase the rate of economic growth.

McKinnon (1973) and Shaw (1973), however, questioned the applicability of the neo-classical approach to developing countries, and instead argued that the distortions from financial repression crowd out high-yielding investments, create a preference for capital-intensive projects, discourage future saving, and thereby reduce both the quality and quantity of investment in an economy. In this framework, money and capital are compliments rather than substitutes: the more attractive it is to hold real money balances, the greater the incentive to invest. Productive investment, and therefore capital accumulation, occurs *because* a large real money stock makes greater amounts of loanable funds available to borrowers (McKinnon, 1973: 59-61; Shaw, 1973: 81). Expanded financial intermediation between savers and investors, in this view, increases the incentives to save and invest, and improves the efficiency of investment (Fry, 1982: 734). In a financially repressed economy a low real deposit rate of interest shrinks the liabilities of the banking system (as savers move away from claims on banks), as it does the supply of investment finance. Extensions of the McKinnon-Shaw framework have generally suggested that raising interest rates to equilibrium levels will increase the rate of economic growth.

Financial Repression and Market Failure

In the 1980s, critics of the McKinnon-Shaw framework argued that raising institutional interest rates might have strong negative effects on savings, investment, output, and growth. Using models incorporating informal credit or "curb" markets, critics of financial liberalization argued that the lack of effective institutions in developing countries required some degree of government control to be maintained over the financial sector (Taylor, 1983; Van Wijnbergen, 1983a, 1983b; Buffie, 1984). The experience of the newly industrializing East Asian economies played a large part in challenging the wisdom of the McKinnon-Shaw framework, suggesting that government intervention in financial markets could be welfare-enhancing (Van Wijnbergen, 1985; Amsden, 1989; Wade, 1990). A complimentary finding from analyses of financial liberalization in Latin America was that lifting government controls, in the absence of adequate regulation, could make a fragile economic situation worse (Edwards, 1984; Díaz-Alejandro, 1985; Hastings, 1993).

Proponents of "optimal" financial repression have argued that financial controls can correct market failures in financial markets, lower the cost of capital for companies, and improve the quality of loan applicants by selecting out high-risk projects. In addition, if used in conjunction with export-promotion schemes, or preferential credit schemes, financial repression could encourage the flow of capital to sectors with beneficial technological spillovers (Stiglitz, 1989, 1994). Of course, there are worlds of difference between the claims that financial repression *can* be efficient and that it *will* be. Although research on credit controls in Japan, South Korea, and Taiwan indicated that financial repression contributed to the high performance of those economies, this evidence remains somewhat controversial.

Moreover, the balance of more systematic, cross-national empirical evidence suggests that there are negative correlations between low real interest rates, high reserve requirements, and low degrees of financial intermediation on one hand, and investment and growth on the other.[2]

The Public-Finance Approach

Most scholars of finance and development have rejected the claim that financial repression is adopted on welfare-maximizing grounds alone. Rather, development macro economists have, generally speaking, reached a strong consensus regarding the reasons for financial repression: fluctuations in government revenue. A financial sector under administratively-imposed restrictions is a potential source of "easy money" for the public budget. In the classic cases of financial repression, the proliferation of financial instruments from which governments can extract seignorage is encouraged, mainly a relatively oligopolistic banking system, since obligatory holdings of government bonds can be imposed on commercial banks. Private securities markets are suppressed through a variety of taxes and duties, since seignorage cannot be so easily extracted from these markets (Fry, 1995: 20-22). In short, financial repression has the overall effect of transferring funds from the financial system to public borrowers.

The "fiscal" choice that governments make in choosing the degree of financial repression, in the public-finance approach, depends on the revenue losses due to the failure of more direct tax instruments. It has been argued, for example, that economies subject to large amounts of income-tax evasion are likely to turn to implicit taxes in the form of the inflation tax, indirect taxes on the financial sector through interest-rate ceilings or high reserve requirements, or some combination of both (Roubini and Sala-i-Martin, 1995). In developing countries facing sustained deficits, it is argued, porous or weak systems of revenue collection force governments to rely on inflation taxes. But when governments allow financial systems to develop fully, the need for people to carry money is reduced, eroding the inflation tax base, along with the opportunities for seignorage. By enforcing restrictions on the activities, services, and products of financial institutions, on the other hand, governments can maintain a ready base for the inflation tax.

The implications of the public-finance approach are simple. First, efficient use of the inflation tax requires certain repressive measures to increase the demand for money (Giovannini and de Melo, 1993; Bencivenga and Smith, 1992; Brock, 1989). Second, everything else being equal, governments that are forced to monetize larger deficits over a longer period of time are more likely to choose some form of financial repression to augment

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2. Studies establishing this relationship are: Lanyi and Saracoğlu, 1983; World Bank, 1989; Roubini and Sala-i-Martin 1992; Easterly, 1993; Levine, 1993; King and Levine, 1993a, 1993b. See Levine, 1996 for a review.

money demand, but also to allow the deficit to be financed at a lower interest rate. The question for this paper is: is the public-finance approach to understanding financial repression justified on theoretical or empirical grounds in the post-Communist transition economies? We briefly explore both in the next section.

III. FINANCIAL REGULATION IN THEORY AND PRACTICE

Our main conceptual objection to the "easy-money" thesis is that it presents an incomplete picture of the financial-policy choice at the heart of the matter. In assuming that governments respond to potential revenue shortfalls in uniform ways, this approach falls short in explaining why different governments facing similar budgetary constraints might choose to regulate their financial systems differently. This, more or less, axiomatic depiction of policy-making processes as homogenous is sharply disputed by research on both the domestic and international aspects of financial policy-making. Institutional differences among political systems have economic effects; this is a central insight from a quarter-century of research on comparative political economy, as well as from more recent empirical studies of financial regulation (Quinn and Inclán, 1997), monetary policy (Hall and Franzese, 1996; Iversen, 1996), and fiscal policy (Alesina and Rosenthal, 1995). At base, financial repression represents a concrete policy choice, and is thus governed by the constraints and incentives facing policy makers.

A more serious objection is that the public-finance explanation for financial repression relegates preferential credit policies to a secondary role. In the public-finance view, preferential credit schemes are an unintended result of interest rate controls, not their cause. In the standard, hypothetical sequence of events: governments facing a large public sector deficit introduce a variety of financial restrictions, including interest-rate ceilings, which allow deficit financing at a lower interest rate. Since interest-rate controls cause the demand for credit to surge, the government is unwittingly drawn into the process of allocating credit among competing users. A significant body of case-study evidence, however, suggests that selective credit schemes are themselves the primary reasons governments repress their financial systems in the first place (Haggard, Lee, and Maxfield, 1993; Lukauskas, 1994; Haggard and Lee, 1996). These are precisely the subjects which are, to us, worth investigating in the context of the post-Communist economies.

Fiscal and Monetary Policy in Post-Communist Economies

The implication that inter-temporal revenue losses may predict the level of financial repression assumes that the fiscal responsibilities of the state are well-defined and enforceable, and that any financial flows from the public to the private sector are controlled and appear in consolidated governmental balance sheets. In other words, "fiscal" property rights are

assumed to be exclusive.[3] For this reason, the public-finance framework carries little explanatory power with respect to the formerly state-socialist economies of Central and Eastern Europe and of the Former Soviet Union.

In practice, of course, all governments can engage in a variety of activities that render "deficits" meaningless numbers. Unbudgeted expenditures, outside the supervision of budget offices, are typical culprits in developing countries (Pradhan, 1996; Campos and Pradhan, 1996). Other quasi-fiscal expenditures include: implicit subsidies with foreign-exchange guarantee schemes, and implicit subsidies from the provision of credit to banks and firms at negative interest rates. In the post-Communist transition economies, moreover, financial repression may be used less as a source of cheap money for public deficits, than as a means of maintaining a soft banking system which essentially absorbs enterprise losses in the short run.

Certain legacies of the socialist financial system suggest this possibility. First, banking sectors remain among the more state-controlled parts of these economies, with few governments having taken steps towards their full commercialization. Thus the line between "public" and "private" finance often remains blurry, with governments prompting banks to act as quasi-fiscal agents of the state through interest-rate controls or, more directly, through directed credit programs. Second, even in the few cases where banks have been fully or partially commercialized, the lending portfolios that formerly state-owned commercial banks have inherited are heavily concentrated among a few firms or industrial sectors. In addition, all formerly state-owned banks inherited bad loans from their public enterprise clients—loans that continue to list on the asset side of their balance sheets. Under such circumstances, foreclosing on the biggest borrowers often threatens the banks themselves (Desai and Pistor, 1997). Finally, the enforcement of debt contracts, in most cases, is impaired due to the incapacity of courts, ambiguities in bankruptcy legislation, and ad hoc government interventions on behalf of certain companies.[4]

While it is difficult to estimate the size of directed credits from the banking systems in transition economies in a reliable way, the experience of Russia is indicative as to how large they can be. Easterly and Vieira da Cunha Cunha (1994), for example, show rapid inflation in Russia eroded the financial savings of households and it was this group that paid the inflation tax. Their estimates suggest that the losses of households becasue of highly negative interest rates, about -78 percent, in 1992 were about 12 percent of Russian GDP. Enterprises, like anybody who had bank deposits, also lost and their losses were about 18 percent of GDP in 1992. However, as the Russian Government issued credit to enterprises this sector was a beneficiary of inflationary financing. Easterly and Vieira da Cunha's estimates suggest that the amount they received in 1992 was about 16 percent of GDP with their net inflaton tax being

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3. On the concept of "fiscal" property rights, see Tanzi, 1993a, 1993b.

4. Over the long run, of course, the inability of insolvent enterprises to make payments on loans should lead commercial banks to cut them off as clients. But in the short term, these factors peculiar to the transition economies may actually encourage banks to lend more, rather than less, to loss-making firms.

only 2 percent as opposed to 12 percent by the households. Hence, the costs of financial repression has been large, at least in Russia and there were large income transfers from one group to another.

One might expect deficits and revenue losses to be an overriding concern of post-Communist governments, most of which have witnessed tax-evasion epidemics following the dismantling of the socialist revenue-collection apparatus, the multiplication of taxpayers following privatization, and the fall in information available to tax authorities (Barbone and Marchetti, 1995; IMF, 1995).[5] Meanwhile, just as public finances were being restructured, governments in this region faced their most severe budgetary pressures in decades, as they were forced to assume spending responsibilities that previously were fulfilled by enterprises—pensions, medical care, and welfare. If these revenue concerns were the primary reason for adopting restrictive controls on the activities of financial intermediaries, then the inflation tax should have been used in conjunction with these restrictions in the transition countries, as the public-finance approach hypothesizes. A graphic illustration of the relationship between reserves in the banking system (an indicator of financial repression) and deficits between 1989 and 1996 reveals no clear-cut answer. The scatter-plot (Figure 1) shows two "clusters" of countries, the first in the lower left-hand portion of the chart, the second farther to the upper-right. But within each of these clusters, one might also see a negative relationship between size of the deficit and reserve ratios. The lack of data impair a more systematic evaluation of this kind.

We examine some hypothesized relationships between financial restrictions and certain fiscal indicators as a second test of the general public-finance framework. The resulting correlations, based on annual data from 25 transition economies, are presented in table 1. Two results seem to confirm the public finance thesis: (i) that tax losses are associated with higher real reserve ratios in deposit-taking banks; and (ii) positive fiscal balances are associated with higher real discount rates. These correlations, however—based on ccountry-year observations--hide what is, to us, both counterintuitive and worth explaining, namely, cross-country differences. In table 2, therefore, we replicate a methodology used by Brock (1989) for some transition economies. The first four columns show means and standard deviations, respectively, for inflation and real effective reserve ratios, both of which are calculated monthly for as many months as are available in the IMF's *International Financial Statistics* monthly tables in order to maximize the number of observations. Only thirteen of twenty-five transition economies report both inflation and the different monetary values needed for the real effective reserve ratio calculation. The fifth and sixth columns show simple correlations and their corresponding level of significance for each country. Of the thirteen values, we find seven which are significant at or above 95% confidence—four suggesting a

5. Revenue collection in the classic socialist system was facilitated to a great extent by the unitary organization of the Party-state, and the relatively small number of tax instruments—namely, turnover, profit, and payroll taxes secured from a small number of large state-owned enterprises under the supervision of branch directorates. For a description, see Kornai, 1992; Garvy, 1977.

positive relationship between inflation and real reserves, and three showing a negative relationship. In Brock's original table, the results (calculated from annual, rather than monthly figures) for selected countries in both the developing world and in industrialized nations suggested a generally robust positive, significant correlation between inflation and bank reserves. Evidence from the transition economies, on the other hand, is at best inconclusive on the relationship between the inflation tax and financial repression.

Finally, for the same thirteen countries, we list maximum and minimum annual real central bank discount rates for the period 1990-1996 in table 3. This table also lists the rank correlations between real discount rates and net government credit on the basis of quarterly IMF figures. In comparison to table 2 above, the correlations generated here are weaker; none of them are significant above the 99% confidence level. More importantly, of the five correlations significant at or above the 90% level only one (Estonia) supports the public-finance hypothesis that lower real discount rates encourage greater government borrowing.

We propose an alternative approach to understanding financial regulation. Our aim here is to provide, as much as possible, a systematic analysis of the political economy of financial liberalization in the post-Communist region, explaining how different policy decisions are reached in different political settings.

Modeling the Politics of Financial Policy

Recent studies of how political institutions shape economic policy are of two views. In the first view, two features of political systems matter: stability and polarization. Unstable governments are claimed to behave more "myopically", that is, discount the future at a greater rate than more cohesive systems, while polarized governments exacerbate the coordination problems inherent in adopting economic reforms and lead to protracted stalemates (Rodrik, 1993).

Governments that are more likely to be thrown out in future elections, and governments that are characterized by divisive and sharp disagreements between alternative policy makers, therefore, are more likely to delay the adoption of stabilization programs (Alesina and Drazen, 1991), and especially more likely to run higher deficits (Roubini and Sachs, 1989; Alt and Lowry, 1994; Grilli, Masciandaro, and Tabellini, 1995). It has been suggested that such explanations of economic policy do not show much affection for the procedural or structural features of democratic government, namely, decentralization, electoral competition, and divided government. Fragmented governments also fall prey to anti-reform forces and vested interests, which can mobilize to block reform programs more easily than if power were consolidated in highly autonomous governmental institutions. Comparative cases studies of reform episodes suggest that centralized authority, unified party systems, and strong executives are what typically characterize the political basis for economic adjustment (Nelson, 1990; Haggard and Webb, 1993; Williamson, 1994; Haggard and Kaufman, 1995).

A more recent, second view has challenged the argument that strong, centralized governments are needed for liberalization. This alternative view suggests that economic reforms are a by-product of struggles for political authority, and thus the major obstacle to economic liberalization is not the stalemate among groups fighting over the distribution of costs and benefits of reforms, but the *internal opposition* to such reforms within governments. Thus reforms are more likely to occur when political outsiders challenge the authority of incumbents (Bates and Kreuger, 1993; Geddes, 1994; Hellman, forthcoming). Accordingly, the structure of political institutions, which determines how internal governmental struggles will be borne out, and how competing interests will be articulated, play a critical role in shaping policy outcomes.

This second approach has been used to explain stabilization delays in the case of the transition economies. Hellman (forthcoming) examines the effects of party fragmentation, coalition structure, and executive power on the "survival" rates of inflationary periods, and finds that those countries whose political institutions are characterized by fragmented parliaments, multi-party coalition governments, and weak executives, stabilize faster than those countries with unified party structures, majority or single-party governments, and authoritarian executives. In the section that follows, we analyze the impact of different political structures on financial policy and financial liberalization, focusing on three main institutional features of legislatures in twenty-five transition countries: the share of seats held by the Communist Party or its direct descendants, the degree of party fragmentation, and the degree of parliamentary support for the government in power.

The first measure we consider to be an approximation of anti-reform incumbent power, the second to be a measure of polarization, the third a measure of expected stability. Following Hellman, we consider the effect of each institutional feature on financial repression separately, in order to test specific, broader hypotheses about the relationship between the characteristics of political institutions and economic policies. The financial policies of transition countries have displayed a great deal of variation between 1989 and 1996 (World Bank, 1996; Begg, 1996); the causes of this variation, and particularly the links between political-institutional variables and policy outcomes have yet to be analyzed in a comprehensive way.

IV. DATA, MODELS, AND RESULTS

Measuring Financial Repression

Financial repression is a reference to a specific set of policies involving a variety of controls on the activities of the main financial institutions in an economy. The analysis of such policies, however, does not easily lend itself to systematic study. First, financial restrictions may be implicit, imbedded in intricate tax codes or financial regulations. Second, there are also problems of coding such policies across countries in a way that is standard and comparable, especially when the countries in question lack precedents or conventions needed

for "benchmarks" against which variation in such policies could be measured. Finally, a financially "repressed" economy may exhibit certain effects—low interest rates for financial transactions, distortions in savings and investment, and low levels of financial intermediation—that may or may not be attributable to those policies. In table 1 above, for example, there are several countries that maintain extremely high reserves in the banking system even if the legal reserve requirements are modest. In Hungary, Estonia, and the Czech Republic, real reserve ratios are 48%, 27%, and 20% respectively despite a common 10% required-reserve ratio in each these countries.[6] It is therefore desirable to consider a range of different indicators of financial repression.

Our solution is to examine three different "proxies" for financial repression and financial liberalization, two of which are policies, one of which measures a hypothesized effect of these policies. The first measure is *directed credit*, which we code as a binary variable. Following earlier studies, countries in which directed credits constitute more that 25% of the total credit volume in the economy are assigned a value of one; all others are coded zero (IMF, 1996; de Melo and Denizer, 1997). Directed credit programs, used by former socialist governments to maintain employment levels in certain industries, represent a fairly severe restriction on the portfolio composition of banks' balance sheets. Under the typical directed-credit scheme, banks are instructed to lend to certain sectors or enterprises a specified portion of their total assets or total lending in a certain time period. These quantitative restrictions, coupled with the interest-rate controls often attached to these loans, tend to segment financial markets in these countries, and constitutes a significant obstacle to their development.

The second dependent variable is the *real discount rate* used by central banks for their refinance operations. Since the discount or refinance rate is a policy measure used at the discretion of the central banks, however, and since it becomes the base rate for other rates, this is likely to be a better indicator of policy stance than deposit or lending rates. We calculate the real central bank discount rate as the nominal discount rate deflated by the price level (annualized).

Finally, we choose a third variable to measure the effect of financial repression on the *level of financial intermediation*. The most accurate way to gauge these effects would be to estimate a money-demand curve at different periods in time in order to measure shifts in the curve, along with changes in cost and income elasticity (Fry, 1995: 21). Such an estimation is difficult in the context of the transition economies due to lack of observations and shortness of time-horizon. We use, instead, the ratio of money supply (defined to include currency in circulation, sight and time deposits, or M2) to GDP—a standard measure of financial "depth" that is consistently found to be higher in market economies (indicating that most transactions

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6. In several countries, banks often kept reserves in excess of what they were required to hold by law as hedge against poorly-enforced creditor rights—a consequence of, among other things, deficiencies in bankruptcy laws, lengthiness of court-adjudicated proceedings, and the limited variety of financial instruments that could yield reasonable risk-adjusted returns.

are intermediated within a formal financial system) and lower in financially repressed economies (Barro, 1991; King and Levine, 1993b).

Explanatory Variables and Estimation

We estimate these four variables using cross-sectional, time-series analysis with country-years as units of observation. Such a pooling of data, in addition to increasing the degrees of freedom, is also more sensitive to the inter-temporal properties of the sample than would be period averages for each country. Ours is not, however, a standard panel as only observations for the year following parliamentary elections are selected, and our electoral variables are lagged once with respect to the dependent variables. Such matching is preferred to a standard panel given that the data exhibit limited variation between elections. In a standard panel this would create problems with standard errors, as one would be trying to approximate a continuous line with a crude stepwise function involving fairly long steps. The units of the time series in our panels, therefore, represent electoral periods rather than calendar years. Although we lose data in between elections for the dependent variables (and some independent variables), we maintain all the inter-temporal variation in the sample and eliminate most of the flat segments. (For an explanation of certain estimation problems and how they were dealt with, see appendix.)

Using the electoral database compiled in Hellman (forthcoming), we calculate three indicators of parliamentary structure.[7] Our first variable is the share of seats in parliament held by members of the Communist Party, or its direct descendant or set of descendants (*COMMP*). A high percentage for *COMMP* can be interpreted, *ceteris paribus*, as an indicator of several things, including "insider" control of the legislature, low development of a party system, lack of political succession in parliament, and so on. In general, then, we consider *COMMP* to measure the degree of "persistence" of pre-reform elites in legislatures. To measure the degree of polarization in parliaments, we use the Rae fractionalization index (*FRACTION*), which measures the likelihood that two legislators chosen at random belong to different political parties.[8] Inevitably, the *FRACTION* panel suffers from two defects: it does not control for the sometimes large number of independent members of parliament, nor does it include "extra-electoral" changes in party affiliation or party unity. Where parties splintered

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7. A complete set of political-institutional indicators should also, naturally, include some measure of executive powers. In fact, Hellman (forthcoming) codes the transition countries according to degree of presidential and prime-ministerial strength, using the methodology in Shugart and Carey (1992). We included these variables in our estimations, but in no specifications did they turn out to be significant, either independently, or in conjunction with the parliamentary-structural variables.

8. The Rae index is defined as: $1-\sum_{i=1}^{N}(p_i)^2$

where p_i is the fractional share of seats of the i-th party (Rae, 1967).

between elections, the increased Rae index is reflected in the next electoral period.[9] Finally, we calculate level of parliamentary support for the government by simply adding up all seats that the government coalition can claim, divided by the total number of seats in parliament (*GOVSTR*). This measure may be interpreted as a proxy for government stability, as low values indicate a higher probability, *ceteris paribus*, that the government in power may be removed at some future date.

We hypothesize that the influence of electoral changes should be the strongest within a finite period following an election. Given that elections take part in different months of the year, and that there is a necessary "transition" period of a few months, during which changes in the composition of parliaments and government produced by elections occurs, the year of election would not be the best choice for the independent variables. After a first full year, moreover, future electoral considerations may change politicians' behavior. For these reasons, all of our relevant political variables are lagged once with respect to the dependent variable.

Several conditioning variables have been included to control for certain factors in the regressions (see appendix for data sources): the logarithm of per-capita GNP (based on the *World Bank Atlas* method), on the premise that richer nations repress their financial systems less; the ratio of fiscal balance to GDP, to test the public-finance claim that countries with larger deficits will repress their financial systems more; and the familiar dummy variable, *Post-Soviet* (coded 1 if the country was a constituent of the U.S.S.R., 0 otherwise) to control for political, economic, social, and structural similarities that former Soviet republics may share.[10] In the regressions for financial depth and the real discount rate, we include the logarithm of the growth in base money to control for currency substitution and portfolio switching that is expected during periods of rapid money growth. and attendant inflation. In the directed credit regression, we include Freedom House's *Freedom Index*, which ranks countries according to their protection of civil and political liberties, in order to test the effect of general regime "openness" on state-enterprise relations.[11] With the exception of per-capital income

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9. As Hellman (forthcoming) notes, this is most commonly the case in countries where broad anti-Communist reform movements won certain critical elections (held in 1990 in Czechoslovakia, Estonia, Latvia, Lithuania Macedonia, Moldova, Romania, Slovenia, 1991 in Russia), but splintered shortly thereafter. In most of these countries, the Rae index rises following the next electoral period, which occurs within two years in all cases except Latvia (three years) and Macedonia (four years). Only in Lithuania (between 1990 and 1992) and Macedonia (between 1990 and 1994) does the fractionalization number fall. Certainly this may hide—or even worse, reverse—some of the inter-temporal variation that occurs, but there is simply no reliable way of accounting for these changes. Part of this problem, however, is solved through our use of "matched" observation panels.

10. Following convention, we did *not* code the Baltic states as "Post Soviet," on the grounds that this might be an artificial way of inducing intra-Soviet variation into the results. Coding them 1, however, does not alter our results significantly.

11. In this sense the Freedom Index is a proxy for "access" to decision making authority, and its inclusion controls for differences across countries.

(which is lagged once), all conditioning variables are contemporaneous to the dependent variable.

In sum, our regressions take the following basic formats:

$$\varphi_{i,t} = \beta_0 + \beta_1(C)_{i,t} + \beta_2(POL)_{i,t-1} + \varepsilon_{i,t}$$

$$\varphi_{i,t} = \beta_0 + \beta_1(C)_{i,t} + \beta_3(POL)_{i,t-1} \times (EE) + \beta_4(POL)_{i,t-1} \times (FSU) + \varepsilon_{i,t}$$

where $\varphi_{i,t}$ is any relevant measure of, alternatively, financial repression or liberalization, $C_{i,t}$ is a vector of contemporaneous conditioning variables, $POL_{i,t-1}$ is any relevant lagged measure of parliamentary structure, β_0 is a constant, β_K for $K>0$ is a coefficient (or vector of coefficients) on each variable (or vector), $\varepsilon_{i,t}$ is a random disturbance term, and where $i=1,...,N$, $t=1,...,T$ for N countries and T time periods. To gauge differences in the effects of the political variables between those countries of the former Soviet Union and those countries in Eastern Europe, we test a second model which disaggregates $POL_{i,t-1}$ into two interactive terms, one with an East-Europe dummy variable (*EE*) another with the Post-Soviet dummy (*FSU*). All regressions—with the exception of the directed credit estimation—were performed using ordinary least squares (OLS).

Results

Tables 4, 6, and 7 present our regression results for each of the dependent variables. In table 4 we report the results for directed credit—generated using the probit method, by which we estimate the probability a given country will implement a directed credit program. In our first model, both the *Freedom Index*[12] and Communist share of seats are significant. Note that, by itself, *COMMP* is significant and has the expected (positive) sign. When we split this variable between former Soviet and East European countries we see that only the Post-Soviet, interactive coefficient is significant. This is so even with the inclusion of the Post-Soviet dummy, suggesting a robust result. In the next step we analyze fractionalization, which carries a significant, negative sign, indicating that fractionalized parliaments are less likely to implement directed credit programs. Fractionalization also has a differential impact between Soviet and non-Soviet states, as it appears that party fragmentation does not increase the probability of having a directed program in East European countries while it does in the former Soviet Union. When we performed similar steps with the government strength variable we found that this variable did not have explanatory power.

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12. Note that in the *Freedom Index*, freedom is measured on an inverted scale, with lower values implying greater political freedom.

For the remaining two regressions, therefore, we examine "real" measures—the ratio of money supply to GDP and the central bank real discount rate. We begin with some averages in table 5. For each parliamentary measure we took averages for each country over the entire available time period. Next we split the sample into "high" or "low" explanatory categories depending upon whether the country fell above or below the median. Finally we calculated the corresponding M2/GDP ratio and real discount rate averages for the appropriate sample of countries over the same time period. These values are listed in table 5, along with the individual countries in their respective groups. From this rough picture, we see that a high percentage of seats held by the Communist Party, a high level of party unity (low fractionalization) in parliament, and a high degree of government support, all correspond to lower real discount rates, but moderately higher levels of financial depth; differences in the real discount rates, are far more pronounced than differences in M2/GDP.

To test these relationships more systematically, we focus first on the M2/GDP ratio, and perform the same series of tests as we did for directed credit and liberalization. We first specify, however, an equation that may be considered a test of an "economic" model, and thus include only the conditioning variables and the Post-Soviet dummy. As shown in table 5, only Soviet membership turns out to be significant (with the expected negative sign), while per-capita income, fiscal balance, and base money growth are not. Following the same steps as in the first two regressions, we individually add variables for Communist Party share of seats, fractionalization, and government strength, decomposing each measure between East-European and Post-Soviet regions.

With the exception of government strength, the coefficient on each measure is significant individually. Note that the statistically significant coefficients for *FRACTION* and *COMMP* carry the signs we expect from table 5. Indeed, according to our results, countries with legislatures having a greater percentage of Communists tend to have higher M2/GDP ratios than countries that do not. Upon splitting this variable, it remains significant for the *FSU* only, although the positive result is still surprising, especially when the Post Soviet dummy remains significantly negative. This would suggest that former Soviet countries as a whole tend to have lower M2/GDP ratios, but that within this region, having a larger group of Communists in parliament has a positive effect on the ratio. The same is not true of the East European countries, where Communist share of seats has no significant effect. Hence, using a dummy variable for the former Soviet Union, as is conventionally done, may not be a useful device; our results suggest that there is a significant amount of variation *within* the Post-Soviet bloc that belies their grouping into a single category. Similarly, parliaments with greater levels of party fragmentation are also associated with lower levels of financial depth. Note, finally, that per capita income and base money growth are nowhere significant, and that positive budget balances seem to lead to *lower* levels of financial intermediation (equations 6 and 7)—again, in contradiction tot he public-finance framework.

Finally, we turn to the central bank's real discount rate, presented in table 6. Our baseline "economic" model includes the identical conditioning variables used in the previous

set of regressions: logarithms of per capita income and base money growth, fiscal balance as a proportion of GDP, and a dummy for the former Soviet countries. In this specification, only base money growth is significant. Base money growth, moreover remains strongly negative for all our specifications, indicating that an increase in this term—that is, an *increase* in the *rate* of base money growth—is correlated with a lower real discount rate, as should be expected. Adding, individually, *COMMP*, *FRACTION*, and *GOVSTR* reveals a common pattern. By themselves, each variable carries significant coefficients with the signs we expect from table 4. That is, higher shares of seats held by Communists and former Communists, greater unity of parties, and greater government strength, all lead to lower real discount rates.

When split between East Europe and the former Soviet Union, these effects are significant for the latter (the exception is government strength, which is significant in interaction with both regional dummies). Note again two surprising findings about the former Soviet Union. First, the Post-Soviet dummy, in each specification where it is significant, carries a positive sign. Surprisingly, therefore, this suggests that former Soviet countries have managed to raise their real discount rates above that which has been set in non-Soviet countries. Second, in two of the three equations where the Post-Soviet dummy is significant (equations 3 and 7) the interactive coefficient carries the *opposite* sign to the Post-Soviet coefficient. While former Soviet countries may set higher discount rates, within these countries party greater party unity and government strength lead to lower rates. Again, this result suggests that there is a substantial amount of variation in monetary policy within the former Soviet Union that is not captured by a single grouping. Ironically, this last set of regressions leaves the fewest degrees of freedom, but produces the best overall fit.

These results do not lend much support to the thesis that financial liberalization will be less in politically unstable or polarized systems. The regressions shown here, in fact, suggest that overall financial repression is greater in countries with higher percentages of Communists in parliament, less party fractionalization, and greater government support. We see that *COMMP* and *FRACTION* are significant for all three dependent variables, GOVSTR for two of them. Moreover, with the exception of our estimation of financial depth, higher *COMMP* values, lower *FRACTION* values, and higher *GOVSTR* values are correlated with a higher degree of financial repression.

The role of deficit financing is less conclusive. Certainly, in some specifications, fiscal balances are significant; in two estimations for M2/GDP and in two estimations for then liberalization index, fiscal balances were correlated with the dependent variable. But in all four equations, the sign of the coefficient is the opposite of what is expected: larger positive fiscal balances are correlated with *lower* levels of financial depth, and with *lower* degrees of overall liberalization. Moreover it is interesting to note that, in these four equations, only after the *GOVSTR* variable is added does the government's fiscal balance generate a significant negative correlation, suggesting that the effect of deficits on liberalization and financial liberalization is, to a certain extent, *conditioned* by the strength of the government. One must allow for the possibility that, when one controls for the strength of the government (measured

by its parliamentary support), deficit-spending governments are *more* likely to liberalize, and *more* likely to develop their financial systems. When we control for the other political variables, deficits have no effect. Indeed, we find only two estimations which support the public-finance thesis. In two regression equations for the real discount rate, positive fiscal balances were correlated with higher real discount rates. But again, when we control for the strength of the government, the significance of the fiscal balance coefficient disappears.

V. CONCLUSION: GOVERNMENTS AND FINANCIAL MARKETS

This paper has presented an exploratory analysis of the political correlates of financial repression in the transition economies. We examined some preliminary evidence for the thesis that, in the face of excessive costs for certain forms of taxation, governments will levy an implicit tax on domestic financial markets. Such claims were not borne out fully in the data. We suggested that the unique lineages of the socialist financial system leave this public-finance framework with limited applicability to post-Communist economies.

As an alternative, we outline a rudimentary approach that examines the effects of the dispersion and concentration of political power in governments on financial policy. We find that, for four separate proxies of financial repression, legislatures with larger proportional numbers of Communists, with less party competition, and with less governmental opposition, tend to extract rents from financial markets in the form of repressive controls. The most reliable predictors of whether governments in transition economies will liberalize financial markets are degree of Communist party control and degree of parliamentary polarization, both of which we found to be significant in most of our specifications. As expected, Communists and their descendants are the most opposed to financial liberalization. But the surprising finding is that polarized, fragmented parliaments are more likely to liberalize and develop financial systems than those that are more unified. Finally, government stability, where it was significant, was found to inhibit the liberalization of financial markets. Our evidence seems to support the view of policy reform predicting that reform periods will occur as politicians struggle to enhance their authority and snatch the levers of fiscal and monetary control away from pre-reform elites.

These findings suggest that repressive financial controls may be adopted not to finance deficits more cheaply than would be the case under financial liberalization, but to maintain the authority and ensure the survival of those in power. In those countries where pre-reform elites are plentiful in legislative bodies, where inter-party competition is low, and where governing parties are well-represented in parliaments, elites have been able to perpetuate a system of implicit subsidies by "softening up" the financial sector—particularly the commercial banks—in order to assure the continued flow of cheap credit to specific borrowers. The main beneficiaries of these policies—large formerly state-owned industries with tight financial links to the largest commercial banks—are thus able to convert their well-established claims on public resources into preferential access to credit lines..

If this is the case, then financial repression serves a special role in transition economies, namely, a mechanism for solidifying main-bank, main-firm relations. Through a combination of partial state ownership of financial institutions and interest-rate controls, governments assure that commercial banks will maintain the largest enterprises as their chief clients, even once the cash flows of those enterprises have been privatized. In general our results lend some support to the common claim of smaller, cash-starved Eastern European entrepreneurs that the commercial banks have "taken over the role of the old planning ministries."

Our results, finally, revealed a wide degree of variation in the financial policies of the post-Soviet republics, and cast some doubt on the usefulness of generalizations about the former Soviet Union. In addition, one of our more surprising findings was that, in the post-Soviet republics, governments in which Communists are well-represented tend to have "deeper", more developed financial systems than the former Soviet countries in which Communists are scarce; this was not, however, the case in the East European countries. This result may belie a non-linear condition in what we have attempted to analyze: that there is an optimal degree of former-elite participation needed for financial reforms, given certain other factors.

If this is true, it suggests a possible explanation for the cross-regional differences between the formerly socialist countries and, for example, Latin America or other developing countries in which financial reforms took place after the consolidation of political power, not before—if those accounts are true. It is likely that the conflicts reformers face in setting financial policy—and economic policy in general—are conditioned by the peculiar political settings inside which they operate, in particular, the relationships between anti-reform elites and existing financial institutions. In the transition economies, the heavy concentration of pre-reform elites in the Communist Party-state apparatus, including the planning bureaucracy and the public-enterprise sector, consisted of extremely tight relationships between these institutions and a few commercial banks. In such a setting, those forces leading to a general dispersion of political authority—away from a single party, away from the central government, and so on—would more likely lead to successfully implemented financial reforms.

By contrast, in countries were the power of anti-reform elites was more decentralized—fragmented along regional, ethnic, or linguistic lines, or where the sources of elite authority were more closely connected to property ownership—and were financial institutions were regionally-based or specially linked to local industries or landholdings, there it may have been necessary for the opposite to occur, that is, for political authority to be centralized before financial reforms could be implemented. We can only suggest this possibility here, to mention it briefly, leaving a more systematic exploration to future research.

APPENDIX

Variables, Definitions, Measurement, and Sources
(Dependent variables in bold)

Variable Mean (Std. Dev.)	*Definition*	*Units and Measurement*	*Sources*
Directed Credit 0.479 (0.503)	Dummy variable for directed credit programs	1 if value of directed credit≥25% of total credit flows, otherwise 0.	1989-1994: de Melo and Denizer (1997); 1995-1996 figures calculated on the basis of central; bank bulletins and IMF staff country reports
Financial Depth 0.326 (0.225)	Proportion of financial transactions in an economy intermediated by formal financial institutions	Ratio of broad money (M2) to GDP, in percent.	IMF, *International Financial Statistics* (various issues), central bank bulletins, and IMF staff country reports
Real Discount Rate -0.350 (0.412)	Base rate charged to financial institution, set at the discretion of the central bank	Discount rate n deflated by annualized change in price level π, in percent: $(1+n/1+\pi)-1$	Same as above
COMMP 0.383 (0.311)	Communist Party control in legislature	Share of seats in parliament held by members of the Communist Party or its descendant(s), in percent. (lagged)	Calculated on the basis of data and in Hellman (forthcoming), updated by the authors
FRACTION 0.601 (0.271)	Index of party fractionalization	Herfindahl index of shares of seats held by all parties in parliament, subtracted from unity. (lagged)	Same as above
GOVSTR 0.649 (0.192)	Government strength	Share of parliamentary seats held by party or parties represented in governing coalition, in percent. (lagged)	Same as above
Post Soviet (FSU-EE) 0.464 (0.502)	Post Soviet and Eastern Europe dummies	1 if country was a constituent republic of the USSR (with the exception of the Baltic states), otherwise 0 (EE coded in the reverse).	Authors' coding

Variable Mean (Std. Dev.)	*Definition*	*Units and Measurement*	*Sources*
Freedom Index 7.466 (3.211)	Index of political freedom (contemporaneous)	Ranks countries from 1 (most free) to 14 (least free)	Freedom House, *Freedom in the World* (various issues)
Per Capita Income 2124.6 (1202.9)	Gross national product divided by population	Log (GNP/Capita), where GNP is in US$, based on World Bank Atlas method. (lagged)	World Bank, *World Development Indicators*
Base Money Growth 3.033 (6.909)	Change in money balances held by monetary authorities	Log (1+ΔM/M), where M is base money. (contemporaneous)	IMF, *International Financial Statistics* (various issues), IMF staff country reports
Fiscal Balance -0.320 (2.242)	General government consolidated budgetary balance	Annual surplus/deficit as percent of GDP. (contemporaneous)	IMF, *Government Financial Statistics* (various issues), IMF staff country reports

Pooled Estimation with "Matched" Observations

Our technique of matching of independent and dependent variables limits the time-series, and thus places certain limits on robustness tests. First, we are forced to ignore any possible contemporaneous correlation between the same variables for different countries. This would be a problem in a standard N×T panel for these countries, because N (the number of units) is 25, while T (the number of time periods) varies between 4 and 6, making it difficult to estimate contemporaneous correlations. Second, it becomes difficult to test for serial correlation in limited T panels. We experimented estimating a single first-order autocorrelation coefficient by a maximum likelihood method, but it did not turn out to be significant in any specification. Third, it is also difficult to test for so-called 'panel heteroskedasticity', where observations for the same unit are assumed to be homoskedastic, but different units may have different variances (Beck and Katz, 1995). As an admittedly imperfect substitute, we applied the White and the Breusch-Pagan tests for heteroskedasticity. Note that these tests are more general, because their alternative hypothesis is that every observation will have different variances; clearly, "panel heteroskedasticity" would not be rejected by this test. With only one exception at 10% confidence level, these tests could not reject the null of homoskedasticity, so estimation is performed by standard OLS. In the one case where there was suspicion of heteroskedasticity, White's correction is applied, modified for small samples.

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Figure 1. Deficits and Reserve Ratios in Selected Transition Economies
(1989-1996 Averages)

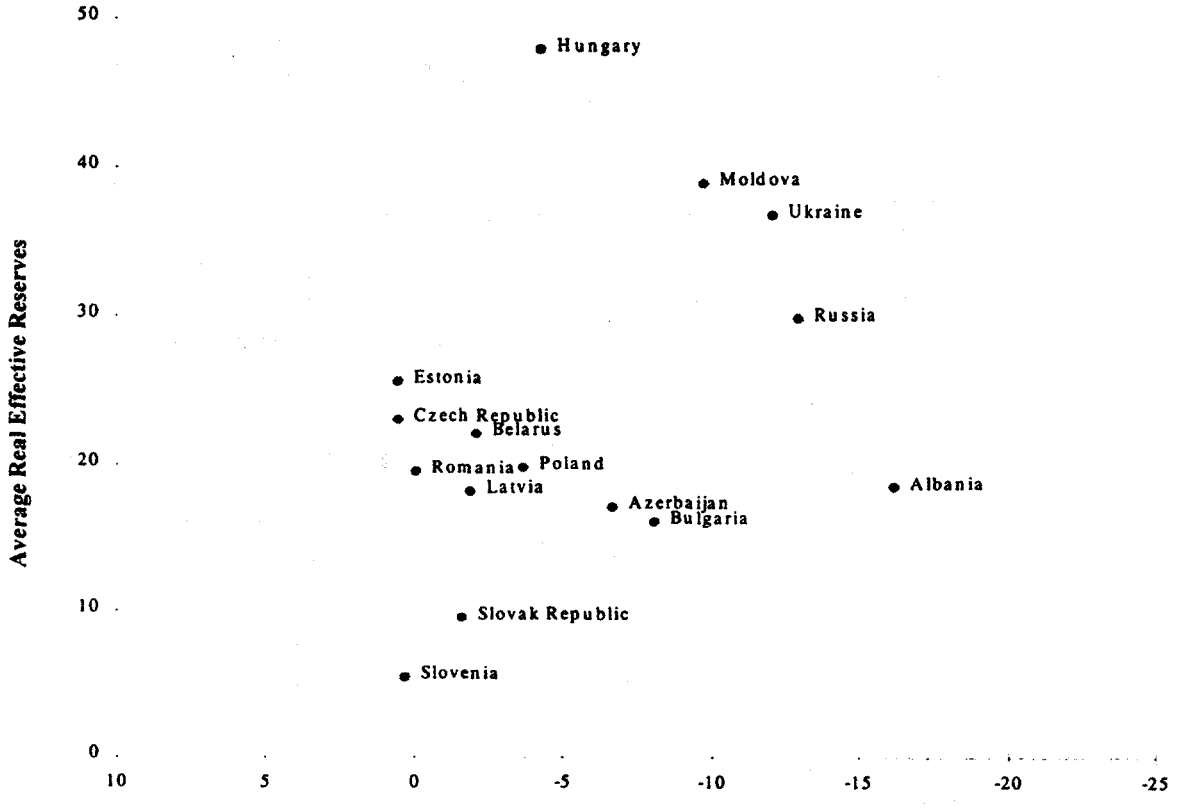

Table 1. Correlations between Selected Fiscal Aggregates and Monetary Policy Instruments

	Real effective reserve ratio	Reserve ratio--unweighted average	Real central bank discount rate
Total tax revenues/GDP	-0.195* (0.041)	-0.332** (0.000)	0.071 (0.420)
Fiscal balance/GDP	-0.195* (0.037)	-0.151 (0.101)	0.251** (0.003)
Ratio of government credit to total domestic credit	0.139 (0.279)	0.065 (0.639)	0.149 (0.219)

Source: International Monetary Fund, *International Financial Startistics* [*IFS*] database.

Notes: Correlations are based on annual data for 25 transition economies, 1990 to 1996. Significance tests are two-tailed. Real effective reserve ratios are calculated as follows [*IFS* line numbers in brackets]:

$$\frac{\textit{reserve money[14]} - \textit{currency outside banks [14a]}}{\textit{money[34]} + \textit{quasi-money[35]} - \textit{currency outside banks [14a]}}$$

Real central bank discount rates (R) are calculated as follows, where n is the nominal rate of interest, π is inflation:

$$R = \frac{(1+n)}{(1+\pi)} - 1$$

Table 2. Inflation and Reserve Ratios in Selected Transition Countries, 1989-1997

	Average Inflation		*Average Real Effective Reserve Ratio*			
	Mean	*Std. Dev.*	*Mean*	*Std. Dev.*	*Correlation*	*(Prob.)*
Albania	0.0407	0.0678	0.0930	0.0606	-0.0149	(0.9400)
Azerbaijan	0.1862	0.2095	0.2808	0.1713	-0.6744**	(0.0000)
Belarus	0.1833	0.2199	0.2124	0.0355	-0.4778*	(0.0101)
Czech Rep.	0.0071	0.0044	0.2057	0.0583	-0.0393	(0.7907)
Estonia	0.0501	0.1038	0.2735	0.1118	-0.1189	(0.3782)
Hungary	0.0189	0.0169	0.4883	0.0868	0.1446	(0.4376)
Latvia	0.0484	0.0855	0.1709	0.0499	0.1768	(0.2626)
Poland	0.0574	0.1082	0.1873	0.0880	0.4397**	(0.0000)
Romania	0.0789	0.0672	0.2614	0.1996	0.3302**	(0.0094)
Russia	0.1140	0.0910	0.2690	0.0447	0.7252**	(0.0000)
Slovakia	0.0079	0.0057	0.1009	0.0438	-0.3686**	(0.0100)
Slovenia	0.0194	0.0260	0.0528	0.0076	-0.1297	(0.3192)
Ukraine	0.1821	0.2184	0.4150	0.2127	0.4019**	(0.0042)

Source: IMF, *International Financial Statistics* [*IFS*].

Note: Inflation is monthly CPI change, averaged over January 1989 to March 1997 using all available figures. Average real effective reserve ratio is calculated as in table 1, averaged from monthly data. Correlations are derived from monthly figures for both inflation and real effective reserve ratios. Significance tests are two-tailed: * $p \leq 0.05$, ** $p \leq 0.01$.

Table 3. Real Discount Rates and Net Government Borrowing in Selected Transition Countries, 1990-1996

	Annual Real Discount Rate		*Mean Government Borrowing*	*Correlation*	*(Prob.)*
	Max.	*Min.*			
Albania	0.1201	-0.3376	0.8676	-0.3889	(0.3408)
Azerbaijan	0.3267	-0.6577	-0.0313	-0.2287	(0.3922)
Belarus	0.1210	-0.7740	0.1860	0.5639	(0.1672)
Czech Rep.	0.0136	-0.2362	0.0115	-0.1668	(0.3950)
Estonia	0.0034	-0.7257	-0.2625	-0.4521*	(0.0907)
Hungary	0.0374	-0.0958	0.5376	0.3259	(0.1103)
Latvia	0.0930	-0.6202	0.2363	0.2152	(0.4755)
Poland	0.0368	-0.4587	0.3023	0.3712*	(0.0584)
Romania	0.4645	-0.3043	-0.0419	-0.4287	(0.1551)
Russia	0.2590	-0.8305	0.3904	0.5491*	(0.0825)
Slovakia	0.0192	-0.2362	0.1279	0.2815	(0.1512)
Slovenia	0.0147	-0.3616	0.1768	0.4509*	(0.0558)
Ukraine	0.3810	-0.7902	0.3322	0.6471**	(0.0155)

Source: IMF, *International Financial Statistics* [*IFS*].

Note: Real discount rates are calculated as in table 1 from quarterly figures, averaged yearly. Government borrowing is calculated from quarterly net government credit divided by total domestic credit, averaged over the year. Correlations are generated from quarterly figures for 1990 to 1996, using all available figures. Significance tests are two-tailed. * $p \leq 0.10$; ** $p \leq 0.05$.

Table 4. Pooled Probit Estimation for *Directed Credit*

	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-2.921 (0.709)**	-2.726 (0.794)**	-0.625 (0.902)	-2.488 (1.462)*	-4.013 (1.169)**	-3.717 (1.651)*
Post Soviet	0.733 (0.500)	0.441 (0.762)	0.809 (0.486)	3.270 (1.617)*	0.125 (0.813)	-0.411 (2.327)
Freedom Index$_t$	0.213 (0.099)*	0.214 (0.100)*	0.193 (0.096)*	0.220 (0.101)*	0.242 (0.150)	0.245 (0.151)
$COMMP_{t-1}$	2.210 (0.774)**					
$COMMP_{t-1} \times EE$		1.682 (1.295)				
$COMMP_{t-1} \times FSU$		2.501 (1.012)**				
$FRACTION_{t-1}$			-2.113 (0.908)*			
$FRACTION_{t-1} \times EE$				0.483 (1.794)		
$FRACTION_{t-1} \times FSU$				-3.256 (1.390)*		
$GOVSTR_{t-1}$					2.689 (1.643)	
$GOVSTR_{t-1} \times EE$						2.206 (2.545)
$GOVSTR_{t-1} \times FSU$						2.997 (2.093)
Observations	70	70	70	70	43	43
Log Likelihood	-26.826	-26.701	-28.506	-27.060	-15.204	-15.174
R^2	48.472	49.006	45.859	48.563	47.957	48.630
Fraction of Correct Predictions	78.571	80.000	80.000	77.143	81.395	86.047

Note: Coefficients are generated using probit estimation. Standard errors are in parentheses. *p≤0.05, **p≤0.01. Significance tests are two-tailed.

Table 5. Average Financial Depth and Central Bank Real Discount Rates under Alternative Features of Parliaments in the Transition Countries, 1989-1996.

Parliamentary Features	*(Median) Countries*	*Average M2/GDP*	*Average Real Discount Rate*
Communist-Party Share of Seats (*COMMP*)	(0.383)		
High *COMMP*	Armenia, Azerbaijan, Belarus, Bulgaria, Kyrgyz Rep., Lithuania, Macedonia, Moldova, Romania, Tajikistan, Turkmenistan, Ukraine, Uzbekistan	0.348	-0.382
Low *COMMP*	Albania, Croatia, Czech Rep., Estonia, Georgia, Hungary, Kazakstan, Latvia, Poland, Russia, Slovakia, Slovenia	0.304	-0.119
Party Fractionalization (*FRACTION*)	(0.601)		
High *FRACTION*	Czech Rep., Estonia, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Slovenia	0.299	-0.104
Low *FRACTION*	Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Croatia, Kyrgyz Rep., Macedonia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan	0.363	-0.424
Government Strength (*GOVSTR*)	(0.649)		
High *GOVSTR*	Albania, Bulgaria, Hungary, Kazakstan, Kyrgyz Rep., Romania, Tajikistan, Turkmenistan, Ukraine, Uzbekistan	0.313	-0.295
Low *GOVSTR*	Czech Rep., Estonia, Latvia, Lithuania, Moldova, Poland Slovakia, Slovenia	0.344	-0.152

Note: Low values are x: $0 \leq x <$ median(x); high values are x: $x \geq$ median(x). Average values for M2/GDP and real discount rates are generated from annual figures for each country. Countries are classified according to annual values averaged over 1989-1996 using all available figures for all available countries. Corresponding dependent variables are averages over 1989-1996 using all available figures.

Table 6. Pooled Regression Results for *Financial Depth* (M2/GDP)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept	0.058 (0.364)	-0.038 (0.356)	0.155 (0.382)	0.117 (0.344)	0.116 (0.350)	-0.796 (0.296)	-0.812 (0.661)
Per Capita Income$_{t-1}$	0.040 (0.048)	0.047 (0.046)	0.029 (0.048)	0.058 (0.046)	0.057 (0.050)	0.124 (0.072)	0.125 (0.075)
Fiscal Balance$_t$	-0.001 (0.010)	-0.007 (0.011)	-0.011 (0.011)	-0.007 (0.010)	-0.008 (0.011)	-2.077 (0.726)**	-2.080 (0.743)**
Base Money Growth$_t$	-0.006 (0.040)	-0.032 (0.040)	-0.044 (0.041)	-0.036 (0.039)	-0.036 (0.040)	-0.097 (0.090)	-0.094 (0.100)
Post Soviet	-0.175 (0.071)**	-0.188 (0.069)**	-0.284 (0.100)**	-0.180 (0.067)**	-0.171 (0.212)	-0.165 (0.119)	-0.142 (0.380)
$COMMP_{t-1}$		0.180 (0.097)*					
$COMMP_{t-1} \times EE$			0.003 (0.165)				
$COMMP_{t-1} \times FSU$			0.274 (0.120)*				
$FRACTION_{t-1}$				-0.263 (0.110)*			
$FRACTION_{t-1} \times EE$					-0.251 (0.288)		
$FRACTION_{t-1} \times FSU$					-0.265 (0.121)*		
$GOVSTR_{t-1}$						0.323 (0.222)	
$GOVSTR_{t-1} \times EE$							0.334 (0.289)
$GOVSTR_{t-1} \times FSU$							0.302 (0.389)
Observations	43	43	43	43	43	30	30
Adjusted R^2	19.104	24.005	25.454	28.048	26.053	31.169	28.189

Note: Coefficients are estimated using ordinary least squares (OLS). Standard errors are in parentheses.
* $p \leq 0.05$, ** $p \leq 0.01$. Significance tests are two-tailed.

Table 7. **Pooled Regression Results for *Central Bank Real Discount Rate***

	(1)	(2)	(3)	(4)†	(5)†	(6)†	(7)†
Intercept	0.120 (0.551)	0.432 (0.503)	-0.055 (0.496)	0.113 (0.427)	0.143 (0.421)	1.838 (0.586)**	1.226 (0.538)*
Per Capita Income$_{t-1}$	-0.007 (0.072)	-0.035 (0.065)	0.010 (0.062)	-0.065 (0.057)	-0.032 (0.061)	-0.161 (0.071)*	-0.115 (0.062)*
Fiscal Balance$_t$	0.007 (0.147)	0.018 (0.014)	0.029 (0.013)*	0.020 (0.012)	0.024 (0.012)*	-0.144 (0.697)	-0.318 (0.593)
Base Money Growth$_t$	-0.352 (0.061)**	-0.295 (0.058)**	-0.249 (0.056)**	-0.293 (0.049)**	-0.282 (0.049)**	-0.548 (0.089)**	-0.456 (0.081)**
Post Soviet	0.017 (0.144)	0.029 (0.103)	0.249 (0.126)*	0.029 (0.089)	-0.303 (0.249)	0.199 (0.113)*	1.010 (0.293)**
$COMMP_{t-1}$		-0.411 (0.138)**					
$COMMP_{t-1} \times EE$			0.057 (0.262)				
$COMMP_{t-1} \times FSU$			-0.666 (0.159)**				
$FRACTION_{t-1}$				0.636 (0.137)**			
$FRACTION_{t-1} \times EE$					0.211 (0.328)		
$FRACTION_{t-1} \times FSU$					0.719 (0.147)**		
$GOVSTR_{t-1}$						-0.854 (0.214)**	
$GOVSTR_{t-1} \times EE$							-0.460 (0.226)*
$GOVSTR_{t-1} \times FSU$							-1.590 (0.310)**
Observations	36	36	36	36	36	25	25
Adjusted R^2	62.898	70.400	75.279	77.718	78.449	78.493	84.615

Note: Coefficients are estimated using ordinary least squares (OLS). Standard errors are in parentheses.
† White's correction applied (heteroskedasticity-consistent standard errors are in parentheses)..
* $p \leq 0.05$, ** $p \leq 0.01$. Significance tests are two-tailed.

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